



Parasitic wasp flown in to tackle fruit flies

The spotted wing drosophila, an invasive fruit fly from Asia, is a devastating pest in cherry orchards. To combat this exotic species, another exotic insect has been flown in: the Asian parasitic wasp. It lays its eggs in the larvae of the fruit fly. If this exotic parasitic wasp can settle in the Netherlands, that may mean less insecticide is needed in future.

TEXT HARM TEN NAPEL PHOTOS WUR & SHUTTERSTOCK

‘It only takes a few flies to cause enormous damage’



This year, cherry growers were granted permission once again to use insecticides to tackle the spotted wing drosophila (*Drosophila suzukii*, commonly referred to by the abbreviation SWD). Such tough measures are needed to control the tiny fly, originally from Asia, as it can destroy a complete harvest. But if the experiments being carried out by Herman Helsen of Wageningen Plant Research are a success, it might be possible to phase out the use of insecticides in future. In mid-August, Helsen released one of the fruit fly’s natural enemies, the parasitic wasp *Ganaspis kimorum*, which is also from Asia, at experimental locations in the Netherlands. The parasite lays its eggs in the larvae of SWD.

HUNDRED EGGS

SWD arrived in Europe from South-East Asia in 2008, reaching the Netherlands in 2012. The females lay up to a hundred eggs with their saw-shaped ovipositor in ripening soft fruits such as cherries and strawberries. The larvae then eat the fruit from the inside. Cherry orchards are particularly badly affected by the fruit fly: because cherries take a long time to ripen, a new generation of fruit flies has already appeared before the fruit is harvested. In the case of other fruit crops, the affected fruits can sometimes be removed to stop the insect spreading. ‘The fruit fly can live on more than 50 species of plants that are found in the Netherlands, so the pest can reproduce and spread everywhere,’ says Helsen. The mild and humid Dutch climate is also ideal for the invasive species, allowing up to seven generations of flies in a ‘good’ year. At first, the Netherlands Food and Consumer Product Safety Authority recommended forbidding insecticides in cherry

orchards in 2025 because of the risk of dispersion and harm to other organisms. But in the end, cherry growers were given permission after all because of the lack of alternatives. Meanwhile, growers are looking for other pest control methods. Most now cover their orchards with fine-meshed insect netting. ‘But a few fruit flies always manage to get through somehow,’ says Helsen. ‘And it only takes a few flies to cause enormous damage.’

Biological pest control using the pest’s natural enemies is a tried and tested method in greenhouse horticulture. For example, parasitic wasps are used against whitefly. What is unusual in the case of SWD is that one exotic species is being used against another. European parasitic wasps are not up to the task, explains Helsen. They look for their prey on the ground, where ordinary fruit flies lay their eggs in the rotting fruit, rather than in the trees where the drosophila eggs are laid. And even if the European parasitic wasps were to lay their eggs in SWD larvae, they would not grow into adult parasitic wasps because the larva’s immune system can recognize the eggs from European parasitic wasps and deal with them.

OVIPOSITOR

Asian parasitic wasps are more successful. They use their antennae to detect the drosophila larvae in the ripening cherries. Then they pierce the cherry skin with their ovipositor and lay their eggs inside the larvae. Those cherries are still unusable because of the hatching parasitic wasp eggs, but this method does stop the rapid reproduction of the destructive fruit flies. The Asian wasp therefore seems to be the ideal enemy, but there is still the question of whether there are risks attached to introducing a new species.

In 2024, Swiss researchers demonstrated that the Asian parasitic wasp exclusively targets SWD. Helsen: ‘It leaves indigenous insects alone.’ In that same year, Wageningen submitted an extensive dossier to the Netherlands Enterprise Agency asking permission to release this parasitic wasp in the Netherlands.

BREEDING PARASITIC WASPS

Helsen got the go-ahead this year. A couple of thousand wasps that had been bred in the WUR lab were released in the central Netherlands. The hope is that the species will settle there. Helsen expects to come across the wasps again in 2026 when he investigates the sites where they were released. ‘It will probably take a couple of more years after that before they have adapted to the local conditions and spread.’

Once a healthy population has formed, they should be capable of putting a halt to the spread of SWD. ‘It will relieve the pressure on the growers but it won’t solve the problem completely,’ says Helsen. Introducing the parasitic wasp directly in the orchards would combat the pest more effectively, but to do that, it needs to be possible to breed the Asian parasitic wasp in a way that is efficient and affordable. Wageningen is investigating the options in partnership with the company Koppert, which develops natural crop protection solutions.

It is not just the orchards that are suffering from the exotic fruit fly. ‘SWD is everywhere in the Netherlands,’ says Helsen. ‘I used to be able to pick blackberries or elderberries when out on a walk, but these days they are almost all spoilt.’ The introduction of the Asian parasitic wasp won’t stop that entirely. ‘The spotted wing drosophila will remain a serious problem for soft fruit.’ ■